Methodist College of Engineering and Technology

Department of Electrical and Electronics Engineering

Course Outcomes

AY: 2019-20 **III Semester**

Course Code	Course Name	Course Outcomes	Taxonomy
PC221EE	Electrical Circuit Analysis	Analyze and obtain the steady state response of electrical circuit	Analyze
		Analyze the behavior of magnetic circuits	Analyze
		Apply network theorems for the analysis of electrical circuits.	Apply
		Analyze solution of first and second order RL, RC and RLC networks.	Analyze
		Apply Laplace transforms for electrical circuits	Apply
		Analyze the behavior of two port networks	Analyze
PC222EE	Analog Electronics	Understand, analyze and apply the diode, BJT and circuits.	Analyze
		Describe the construction and working of Bipolar Junction Transistor in various modes, and JFET	Understand
		Understand Familiarize with feedback concepts and identify various types of feedback amplifiers.	Understand
		Analyze and Study the importance of power amplifiers and Oscillators.	Analyze
		Understand the operation and applications of op-amps.	Understand
		Learn the different types of analog circuits with their responses.	Understand
PC223EE	Electro Magnetic Fields	Understand the vector calculus for electromagnetism.	Understand
		Apply the electric fields for simple configurations under static conditions	Apply
		Analyze and apply the static magnetic fields.	Analyze
		Analyze the Electrical Circuits with the	

		concept of Network topology	Analyze
		Understand Maxwell's equation in different forms and different media	Understand
		Understand the propagation of EM wave	Understand
ES213ME	Energy Sciences Engineering	Understand the basics of various sources of energy	Understand
		Demonstrate and understand the working of different power plants of conventional energy sources	Understand
		Analyze the working principles in generating of power using solar and wind sources	Analyze
		Analyze the power generation using the ocean energy and geothermal sources	Analyze
		Analyze Waste recovery systems and energy storage systems	Analyze
		Examine the pollution control methods , BEE standards, future needs and challenges, Estimation of cost in power production	Analyze
MC112CE	Environmental Science	Adapt Environmental ethics and verbally discuss environmental issuesto attain sustainable development.	Understand
		List out common and adverse human impacts on biotic communities, soil, water, and air quality and suggest sustainable strategies to mitigate these impacts	Remember
		Identify various levels, values and threats of biodiversity and bio-geographical classification of India.	Apply
		Elaborate social and environmental issues to prevent future damage of the environment.	Analyze
		Understand the importance of Environmental legislation policies.	Understand
		Categorize the types of environmental pollution and the various treatment technologies for the diminution of	Analyze

		environmental pollutants and contaminants.	
ES211CE	Engineering Mechanics	Apply the fundamental concepts of forces, equilibrium conditions for static loads.	Apply
		Determine the Centroid and moment of inertia for cross various sections.	Evaluate
		Analyse the forces in the members of a truss using method of joints and method of sections	Analyse
		Explainthe concept of friction for single and connected bodies.	Understand
		Apply the basic concepts of dynamics, their behaviour, analysis and motion bodies	Apply
		Solve problems involving work energy principles and impulse momentum theory.	Apply
HS203PS	Industrial Psychology	Understanding to Apply the Psychology Concepts , theory in Industrial perspective	Apply
		Understanding the role played of psychological factors like Motivation, Human needs , Incentives , Job satisfaction , Counselling etc . , and their application in Industry	Understand
		Understand and Evaluate Consumer behaviour towards production enhancement	Evaluate
		Evaluate the present work methods and analyze their deficiencies and identify corrective methods	Analyze
		Identify the consequences of disturbing work environment due to factors like Noise , Illumination , Atmospheric conditions , work efficiency, fatigue etc. and discuss to mitigate them.	Apply
		To Examine a Holistic and Humane approach and apprise workers in Industry	Analyze
MC113PY	Essence of Indian Traditional Knowledge	To outline the history of civilization in Indian context since pre-Vedic times	Understand
		To outline the various schools of Indian Philosophy	Understand

		To demonstrate the diversity in Indian Thought , Languages , regional culture , dress, living style etc.	Understand
		To Identify the various religious and social reform movements which took place in the past few centuries	Apply
		To classify the wealth of Indian Fine Arts and the diversity associated with it over the length and breadth of the country	Understand
		To List the various subjects which flourished in ancient system of education and the progression thereof to modern India.	Remember
BS206BZ	Biology for Engineering	Recall the diversity in the living world	Remember
		Differentiate between microorganisms, plants, animals and the human system.	Understand
		Classify the organism for its employment in real time design and planning applications.	Evaluate
		Use of the knowledge of organism their systems and utilize to simulate, design and in planning applications.	Create
		Utilise the knowledge to analyze, distinguish and draw inference about the functioning of the living systems.	Analyze
		Able to apply this fundamental knowledge in projects related to human society.	Apply
PC251EE	Analog Electronics Lab	Describe and Analyze different types of diodes, their operation and characteristics.	Analyze
		Analyze the ripple factor, efficiency and % regulation of rectifier circuits	Analyze
		Design and Analyze feedback amplifiers and op-amp oscillator circuits	Design
		Design single, and multi-stage amplifier, wave shaping and controller circuits	Design
		Understand the characteristics of electronics devices	Design
		Design of P, PI and PID controllers using op-amps	Design

PC252EE	Computer Aided Electrical Drawing Lab	Identify and draw different components of electrical systems	Apply
		Draw different control and wiring diagrams	Create
		Draw winding diagrams of electrical machines	create
		To understand the terminology of electric circuit and electrical components	understand
		Familiarize with electrical machines, apparatus and appliances	understand
		To acquire knowledge on various Electrical Engineering software	Evaluate

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Methodist College of Engineering and Technology

Department of Electrical and Electronics Engineering

Course Outcomes

AY: 2019-20 **V Semester**

Course Code	Course Name	Course Outcomes	Taxonomy
PC501EE	Power System-I	Explain to the power /Energy demand in the form of graph Base Load and Peak Load	Understand
		Formulate A.C and D.C distribution networks for necessary variable calculation	Create
		Make use of Understand and acquire knowledge about various power generation.	Apply
		Discuss to Ability of various power sources for generation of power Merit/Demerits	Create
		Analyze to Supports sag and tension and String efficiency.	Analyze
		Modeling and calculating of transmission line parameters and power system components for a specified system and application	Analyze
PC502EE	Electrical Machines-II	Summarize the construction, working principle and performance of Transformers, 1-phase and 3-phase Induction Motors	Understand
		Determine the construction, working principle, performance, starting and speed control of 1-phase and 3-phase Induction Motors.	Evaluate
		Identify the construction, working principle and performance of Transformers and Induction motors.	Apply
		Examine the rating, testing and applications of single phase, three phase transformers.	Analyze
		Adapt the knowledge of Rotating magnetic field theory, Double field revolving theory	Create
		Find the equivalent circuit diagram of transformer, three-phase induction motor and single-phase induction motor	Remember

PC503EE	Electrical Measurements and Instrumentation	To explain the different types and constructions of dc and single phase / three phase ac measuring equipment used along with their governing equations	Understand
		Understand the construction and applications of ac meters, their errors, compensation and testing.	Apply
		To identify, out of the various methods using bridge circuits available , for the determination of electrical parameters of Resistance , Inductance Capacitance, and frequency and the importance of gauges and transducers	Apply
		To utilize the importance of B – H curve in electrical apparatus as in CTs and PTs and their errors	Apply
		To Examine the use of ac and dc Potentiometers for use in calibration of meters.	Analyze
		To appraise the importance of special meters like MDI, PF , Frequency , synchro scopes , strain gauges and transducers	Evaluate
PC504EE	Linear Control Systems	Understand the concept of the terms control systems, feedback, Mathematical modeling of Electrical and Mechanical systems.	Understand
		Explain the time domain and frequency response analysis of control systems.	Evaluate
		Apply the knowledge of various analytical techniques used to determine the stability of control systems.	Apply
		Understand the importance of design of compensators	Create
		Demonstrate controllability and observability of modern control systems.	Understand
		Understand and develop the state space representation of control systems.	Apply
PC505EE	Digital Signal	Classify discrete-time signals and discrete-time systems and determine the response of discrete-	Understand

	Processing and Application	time system to a given input.	
		Solve the frequency response of the discrete-time system by applying z-transform to the systems	Apply
		Determine the Discrete-Time Fourier Transform of discrete-time systems	Evaluate
		Find the Discrete Fourier Series coefficients of discrete-time signals and represent discrete-time systems in terms of Discrete Fourier Series coefficients	Remember
		Modify the method of evaluating the Discrete Fourier Transform of discrete-time signals by using Fast Fourier Transform, thereby reducing the computational efforts	Create
		Analyze the characteristics of digital Finite Impulse Response (FIR) filters and digital Finite Impulse Response (FIR) filters and design digital Finite Impulse Response (FIR) filters and digital Infinite Impulse Response (IIR) filters	Analyze
PE501EE	Programmable Logic Controllers	Develop PLC programs for industrial applications.	Apply
		Adapt the knowledge of PLC counter functions, PLC Arithmetic functions and data handling functions.	Create
		Define typical components of a Programmable Logic Controller.	Remember
		Explain the basic concepts of a Programmable Logic Controller.	Evaluate
		Illustrate the basic PLC terminology and their meanings.	Understand
		Analyse and apply the concept of electrical ladder logic, its history, and its relationship to programmed PLC instruction.	Analyse and Apply
PE503EE	FACTS Devices	Illustrate the technical benefits of FACTS devices, importance of control parameters and classify the FACTS controllers.	Illustrate
		Identify different shunt, series and combined Compensators	Identify

		Understand the concepts of controlling real and reactive power in transmission system	Understand
		Analyze the principle and operation of various FACTS devices like SVC, STATCOM, TCR, TCSC, FC-TCR, TSSC, SSSC, UPFC	Analyze
		Apply Impedance, Phase Angle and Voltage Control for Real and Reactive Power flow in AC transmission Systems	Apply
		Analyze the applications of the FACTS Devices	Analyze
MC901EE	Gender Sensitization	Develop a better understanding of important issues related to gender in contemporary India	Understand
		To change the basic dimensions of the biological, sociological, psychological and legal aspects of gender through discussions, facts, everyday life, literature and film.	Apply
		To analyze how gender discrimination works in our society and how to counter it.	Analyze
		To identify and plan better ways of working and living together as equals.	Apply
		To develop a sense of appreciation of women in all walks of life.	Evaluate
		To enable in developing good interpersonal relationships at workplaces and to develop a sustain interest in gender equality.	Create
PC551EE	Electrical Machines Lab	Verify the theory and working of electrical machines through laboratory experimental work.	Understand
		Make circuit diagram connections to perform experiments, measure, analyze the observed data to come to a conclusion.	Evaluate
		Organize reports based on performed experiments with effective demonstration of diagrams and characteristics/graphs.	Analyze
		Determine the different parameters of a three-phase alternator and its regulation	Understand
		Determine the different parameters of a three-phase synchronous motor as well as its ‘V’ and ‘inverted V’ curves	Analyze
		Compare the performance characteristics of different electrical machines.	Create
PC552EE	Power Electronics Lab	Classify and design different triggering circuits of SCR and MOSFET.	Create

		Analyze different commutation circuits of SCR	Analyze
		Explain and make use of controlled rectifiers to control the speed of DC motors	Apply
		Explain the applications of cycloconverters and AC voltage controllers	Apply
		Analyze Chopper circuits	Analyze
		Design and Simulate different power electronics circuits using MATLAB software	Create
PC553EE	Circuits and Measurements Lab	Understand Performance of P, PI and PID Controllers.	Understand
		Develop PLC programs for certain applications.	Apply
		Make use of the knowledge of Data acquisition system and Industrial process control in real world.	Apply
		Develop transfer function of various control system plants practically by conducting the experiments.	Apply
		Design and Simulate the Programming and control system concepts using MATLAB.	Create
		Understand Performance of P, PI and PID Controllers.	Understand

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Methodist College of Engineering and Technology

Department of Electrical and Electronics Engineering

Course Outcomes

AY: 2019-20 **VII Semester**

Course Code	Course Name	Course Outcomes	Taxonomy
PC701EE	Power System Operation and Control	Solve load flow by appropriate modeling of the given power system and formulation of Y bus.	Apply
		Evaluate generation mix for economic operation with and without transmission losses.	Evaluate
		Explain load frequency control and estimate the frequency deviation through modeling.	Understand
		Analyse and describe different types of power system stability and establish SSSL.	Analyse
		Identify various methods of voltage control and study the reactive power compensation.	Apply
		Design the railway steel bridges and bridge bearings	Create
PC702EE	Electric Drives and Static Control	Define Steady state analysis and to control speed torque characteristics and closed loop operation of DC motors.	Remember
		Examine the characteristics of different DC Motors.	Analyse
		Classify single quadrant, four quadrant operations and braking methods of Dc Drives.	Understand
		Construct and evaluate the different types of slip power recovery schemes, Scherbius and Kramer drives.	Apply and Evaluate
		Apply different topologies to Power electronic drives.	Apply
		Modify Power electronic circuits according to real time applications.	Create
PC703EE	Electric Machine Design	Classify electrical engineering materials	Understand
		Choose the materials to be used in an electrical equipment	Apply
		Examine the effect of various parameters on performance of electrical machines and Compare.	Evaluate

		Create a basic dimensional design of an electrical machine , given salient parameters.	Create
		Apply principles for a magnetic and a heating circuit to assess MMF and heat flow	Evaluate
		Classify use of software for developing computerized design of machines	Create
OE701CE	Green Building Technologies	Explain the concepts of sustainability and a green buildings, along with its features and benefits.	Understand
		Describe the criteria and methods used for site selection & planning and in achieving water efficiency in green buildings.	Understand
		Define the terms and explain the methods used for achieving energy efficiency in green buildings.	Understand
		Discuss the various types of building materials and waste management methods for a sustainable built environment.	Understand
		Describe the methods used to maintain indoor environmental quality.	Understand
		List and explain the various Green Building Rating systems applicable in India, and also the standard national and international codes related to green building practices.	Understand
OE702CE	Road Safety Engineering	Demonstrate about road accidents and its study objectives. Prepare accident investigation reports and database based on data collected.	Understand
		Apply design principles for roadway geometrics improvement with various types of traffic safety appurtenances/tools	Apply
		Explain the road safety design operations, counter measures & characteristics to manage traffic including incident management	Understand
		Illustrate the concept of Road Safety Auditing its principles, procedures and code of good	Understand

		practice and checklists	
		Explain about design and working principles of road signs and traffic signals	Understand
		Describe applications of ITS in effectively managing the traffic incidents.	Understand
PC751EE	Electrical Simulation Lab	Compose (Write) MATLAB code using some basic commands.	Create
		Develop MATLAB code for analyzing power system network by obtaining line parameters, Z, Y matrices, and Economics of power systems	Apply
		Simulate the concepts of Electrical Circuits, to design a led, lag, led and lag compensator and obtain the characteristics by Control Systems and interpret data.	Create
		Demonstrate (Determine) the knowledge of programming environment, compiling, debugging, linking and executing variety of programs in MATLAB.	Evaluate
		Demonstrate ability to develop Simulink models for various electrical systems.	Apply
		Validate simulated results from programs/Simulink models with theoretical calculations.	Apply
PC752EE	Microprocessor and Microcontroller Lab	Adapt the knowledge of Architecture of 8086 and 8051, writing assembly language programming for different applications.	Create
		Explain types of microcontrollers and their applications.	Understand
		Develop a write programs to run on 8086 microprocessor based systems.	Apply
		Define the techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.	Remember
		Interpret the difference between Microprocessors and Microcontrollers.	Evaluate
		Simplify and design system using memory chips and peripheral chips for 16-bit 8086 microprocessor.	Create
PW761EE	Project Work-I	Rephrase the basic concepts of electrical engineering and discover the implementation	Analyse
		Develop the design and analysis of a particular	Apply

		problem in project	
		Formulate the programming and interpret the project	Create
		Develop the hardware	Create
		Perceive the practical knowledge within the chosen area of technology for project development	Evaluate
		Evaluate different solutions based on economic and technical feasibility	Create
PW762EE	Summer Internship	Select the task or realize a prespecified target, with limited scope, rather than taking up a complex task and leave it.	Remember
		Outline the alternate viable solutions for a given problem and evaluate these alternatives with reference to prespecified criteria.	Understand
		Choose the selected solution and document the same.	Apply
		Examine with industrial experts to familiarize the work culture and ethics of the industry.	Analyse
		Determine andenhancethe confidence while communicating with industry engineers.	Evaluate
		Design/develop a small and simple product in hardware or software.	Create

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